

In the Claims:

Claims 1 to 10 (Canceled).

1    **11.**   (Previously presented) A sensor transponder (1) with a  
2           facility for transmitting measurement data from a tire (9)  
3           to a receiving facility and at least one acceleration  
4           sensor, characterized in that the sensor transponder (1) is  
5           fitted on an inner side of the running surface (2) of the  
6           tire (9).

1    **12.**   (Previously presented) The sensor transponder (1) according  
2           to claim 11, characterized in that as a receiving facility,  
3           a receiving antenna is fitted, which is preferably arranged  
4           in a vehicle.

1    **13.**   (Previously presented) The sensor transponder (1) according  
2           to claim 12, characterized in that the receiving antenna is  
3           also designed as a transmitting antenna.

1    **14.**   (Previously presented) The sensor transponder (1) according  
2           to claim 11, characterized in that the sensor transponder  
3           (1) comprises a memory for tire-specific parameters.

1    **15.**   (Previously presented) The sensor transponder (1) according  
2           to claim 11, characterized in that the sensor transponder  
3           (1) comprises at least one pressure sensor.

- 1     **16.**   (Previously presented) The sensor transponder (1) according  
2           to claim 11, characterized in that the sensor transponder  
3           (1) comprises at least one temperature sensor.
- 1     **17.**   (Previously presented) The sensor transponder (1) according  
2           to claim 11, characterized in that a central unit is fitted  
3           and the evaluation of the signals from the sensor  
4           transponder (1) is conducted in the central unit.
- 1     **18.**   (Previously presented) A procedure for calculating a tire  
2           contact length (6), whereby a sensor transponder (1) is  
3           fitted with at least one acceleration sensor arranged on  
4           the inner side of a running surface (2) of a tire (9), the  
5           signals from the acceleration sensor are compared with  
6           threshold values and are then integrated, and the tire  
7           contact length (6) is calculated independently of the  
8           velocity using quotient formation.
- 1     **19.**   (Previously presented) The procedure according to claim 18,  
2           characterized in that the tire contact area (tread) is  
3           calculated from the tire contact length (6) using  
4           tire-specific parameters.
- 1     **20.**   (Previously presented) The procedure according to claim 19,  
2           characterized in that the wheel load is calculated using  
3           the tire contact area and the tire pressure.

1     **21.**   (New) An apparatus for acquiring measured data from a tire  
2           of a vehicle, comprising:

3                 a receiver arrangement;

4                 a transponder that is adapted to transmit measured  
5           data comprising acceleration data to said receiver  
6           arrangement; and

7                 an acceleration sensor that is mounted on an inner  
8           side of a running surface of the tire of the vehicle and  
9           that is arranged and adapted to measure and provide the  
10          acceleration data to said transponder.

1     **22.**   (New) The apparatus according to claim 21, wherein said  
2           transponder is mounted on the inner side of the running  
3           surface of the tire, and wherein said transponder and said  
4           acceleration sensor are combined together to form a sensor  
5           transponder unit.

1     **23.**   (New) The apparatus according to claim 22, wherein said  
2           sensor transponder unit further comprises a memory that  
3           stores tire-specific parameters characterizing the tire and  
4           that is connected to said transponder.

1     **24.**   (New) The apparatus according to claim 22, wherein said  
2           sensor transponder unit further comprises a pressure sensor  
3           that is arranged and adapted to measure an air pressure in  
4           the tire and to provide corresponding pressure data as part  
5           of said measured data to said transponder.

1     **25.**   (New) The apparatus according to claim 22, wherein said  
2           sensor transponder unit further comprises a temperature  
3           sensor that is arranged and adapted to measure a  
4           temperature in the tire and to provide corresponding  
5           temperature data as part of said measured data to said  
6           transponder.

1     **26.**   (New) The apparatus according to claim 21, wherein said  
2           receiver arrangement comprises a receiving antenna arranged  
3           in the vehicle.

1     **27.**   (New) The apparatus according to claim 26, further  
2           comprising a transmitter arrangement connected to said  
3           receiving antenna which is further designed and adapted as  
4           a transmitting antenna.

1     **28.**   (New) The apparatus according to claim 21, further  
2           comprising a central unit that comprises an evaluation unit  
3           arranged in the vehicle and connected to said receiver  
4           arrangement, wherein said evaluation unit is adapted to  
5           evaluate and process the measured data.

1     **29.**   (New) The apparatus according to claim 28, wherein said  
2           evaluation unit comprises a comparator and an integrator,  
3           wherein said comparator has an input connected to said  
4           receiver arrangement so as to receive the measured data and  
5           has an output connected to said integrator.

1     **30.**   (New) The apparatus according to claim 21, wherein said  
2           acceleration sensor comprises a DC-compatible acceleration  
3           sensor with low pass behavior.

1     **31.**   (New) The apparatus according to claim 21, wherein said  
2           acceleration sensor comprises a non-DC-compatible  
3           acceleration sensor with differentiating behavior.

1     **32.**   (New) A method of using the apparatus according to claim 29  
2           to calculate at least a tire contact length of the tire of  
3           the vehicle, comprising the steps:

4           a)   as the tire rotates, measuring said acceleration data  
5               of the tire using said acceleration sensor;

6           b)   using said transponder transmitting said measured data  
7               comprising said acceleration data to said receiver  
8               arrangement, and providing said measured data from  
9               said receiver arrangement to said central unit;

10          c)   in said evaluation unit evaluating said acceleration  
11               data to determine therefrom a first result dependent  
12               on a duration of said acceleration sensor passing  
13               through said tire contact length during one rotation  
14               of the tire and a second result indicative of a  
15               duration of said one rotation of the tire, wherein  
16               said evaluating comprises comparing said acceleration  
17               data to a threshold using said comparator and  
18               controlling said integrator with an output signal of  
19               said comparator; and

20 d) forming a quotient of said first result relative to  
21 said second result to determine said tire contact  
22 length relative to a circumference of the tire and  
23 independent of a tire rotation speed of the rotation  
24 of the tire.

1 33. (New) The method according to claim 32, further comprising  
2 a step of calculating a tire contact area of the tire from  
3 said tire contact length and at least one tire-specific  
4 parameter of the tire.

1 34. (New) The method according to claim 33, wherein said sensor  
2 transponder unit further comprises a pressure sensor that  
3 is arranged and adapted to measure an air pressure in the  
4 tire and to provide corresponding pressure data as part of  
5 said measured data to said transponder, wherein said method  
6 further comprises a step of calculating a wheel load of the  
7 tire from at least said tire contact area and said pressure  
8 data.

**[RESPONSE CONTINUES ON NEXT PAGE]**